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ART. 6. A REVIEW OF THE AFRICAN GENUS *DAPIDODIGMA* (LEPIDOPTERA: LYCAENIDAE)\*

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This curious genus has long been considered to be monotypic, represented only by the species *hymen* F., occurring from Sierra Leone to the Congo River. Until recently the only specimens in Carnegie Museum were several from southern Cameroun, mostly taken by A. I. Good many years ago. They had been identified as *hymen* and since their agreement with published descriptions and figures was good there was no reason to question the identification. The receipt of a fine series of the genus from Liberia, however, altered this state of affairs considerably, for they were unquestionably different from the Cameroun series. At about this same time we received additional specimens of the genus from the Katanga which appeared to represent yet another entity. The survey here given is based on this assembled material.

*Dapidodigma* Karsch

*Dapidodigma* Karsch 1895, Entomologische Nachrichten, v. 21, p. 310 (Genotype, by original designation, "*Papilio liger* Cramer . . . 1782 . . . = *Papilio hymen* F. . . . 1775").

*Amblypodia*, *Hesperia*, *Myrina*, *Papilio*, *Polyommatus*, *Sithon*: auct., partim.

Key to species and subspecies

- 1. a. Male with hind wing scent patch wholly below  $M_1$  and costal cell vein; under side of fore wing without specialized creamy scaling on inner margin; female with the white radiating streak (extending from inner margin near base diagonally across wing to apex) interrupted in Sc-Rs subterminally by a transverse brown bar ..... *hymen* F.
- b. Male with hind wing scent patch extending well costad of cell and  $M_1$ ; underside of fore wing with a large specialized patch of creamy scales on middle of inner margin, reaching costad to  $Cu_2$  ..... (*demeter* sp. nov.) ...2
- 2. a. Under side of hind wing (both sexes) with the central white line in the three diagonal segments ( $M_3$ - $Cu_1$ - $Cu_2$ -2A) of the postmedian band thicker than the black-brown which flanks it on either side; fore wing postmedian band with its outer white line in  $M_1$ - $M_2$  straight and transverse but sending a slender inter-nervural white streak distad ..... *demeter nuptus* ssp. nov.
- b. Under side of hind wing (both sexes) with the central white line in the three diagonal segments of the postmedian band thin, thread-like, much thinner than the flanking black; fore wing postmedian band with the outer white line in  $M_1$ - $M_2$  V-shaped, the apex pointing distad ..... *demeter demeter* sp. nov.

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*Dapidodigma hymen* Fabricius, 1775 (Plate 1, Fig. 1, 4, 7, 10).

*Papilio hymen* Fabricius 1775, Systema Entomologiae, p. 519 (Sierra Leone).

*Papilio liger* Cramer 1782, Papillons Exotiques, v. 3, p. 109, plate 254, figures E, F ("Suriname . . . also . . . Sierra Leona").

*Sithon hymen*: Kirby 1871, A Synonymic catalogue of diurnal lepidoptera, p. 413 (synonymizes *liger* to *hymen*).

This species is most readily distinguished in the male by the posterior displacement of the creamy androconial patch on the hind wing above. Costally it does not extend at all beyond  $M_1$  and the costal edge of the cell, while posteriorly it reaches beyond the cell border and distally it extends to well beyond the middle of the distance between cell-end and termen in the medio-cubital region. Even more striking is the complete absence of the patch of creamy-colored specialized scales on the inner marginal area of the fore wing below, the normal pattern elements continuing fully developed to lost vein 1A, posterior to which they are more or less lost in the narrow marginal whitish. On the under surface the only other trait that is apparent is the great reduction in intensity of the whitish streak that runs from near the base of the inner margin diagonally outward towards the apex. Though noticeable in both sexes this is especially marked in females (See key). It should be added however, that, despite this, females of *hymen* and *demeter* are exceedingly similar and may not always be separable on pattern characters.

*Length of fore wing.* Male, 17-18.5 mm., mean (4 males), 17.5 mm.; female, 18-18.5 mm., mean (2 females), 18.2 mm.

*Material examined.* All from Liberia (Harbel; Wanau Forest Reserve (near Ganta); Ganta) leg. R. M. Fox.

*Remarks.* See under *demeter*.

*Dapidodigma demeter* sp. nov. (Plate 1, Fig. 2, 5, 8, 11).

*Male.* Differs from that sex of *hymen* chiefly as follows: somewhat larger (see measurements below); the cream-colored androconial patch of the hind wing above extends well costad of the cell and  $M_3$ , reaching as far as Sc; posteriorly it does not extend farther than the cell-end and base of  $M_3$ , and distally it reaches to barely a third of the distance between cell-end and termen. Thus the whole patch in *demeter* appears to have migrated costad, as compared with *hymen*. On the hind wing termen the costal dark patch is narrower (ca. 1 mm.) than in *hymen* (ca. 1.5 mm.) and inwardly more vaguely defined. On the fore wing below the inner marginal area from  $Cu_2$  and the posterior border of the cell is almost entirely filled with white (cream-colored in the central half or so, becoming bluish peripherally); all that here remains of the ground color is a subterminal bar of brown. On the hind wing the white streak is rather well developed, though distally cut by the brown post-median band and a distal contiguous wedge of brown ground color in Sc-Rs.

*Female.* Almost identical with that sex of *hymen*. On the upper surface of the hind wing the pale blue extends a little farther towards the tornal region, leaving the distal black-brown only as a slender, vague, lunulate band subterminally in  $Cu_3$ - $Cu_2$ -2A, separating the basal blue from the subterminal bluish lunules there. On the under surface the inner marginal area of the fore wing below  $Cu_2$  is white (as in all females of the genus), with the stronger brown line elements present in reduced form. The white streak of

the hind wing is well developed, and not, or only partly, cut by the postmedian band in Sc-Rs.

*Length of fore wing.* Male, 19.0-21.0 mm., mean (5 specimens), 20.0 mm.; female, 17.5-20.5 mm., mean (10 specimens), 18.8 mm.

*Holotype*, male, Efulen, S. W. Cameroun, no date (A. I. Good), from the Holland Collection; *allotype*, female, same locality, Aug. 29, 1912 (H. L. Weber), C. M. Acc. 4794. *Paratypes*: 3 males, 4 females, same data as holotype; 1 male and 4 females, Efulen (H. L. Weber), dated respectively, Feb. 10, 1913; July 6, 1916; Sept. 3, 1920; Jan. 11, 1914; Dec. 9, 1924; 1 female, Asandik, 83 miles SE. of Efulen, May 10, 1913 (H. L. Weber). C. M. Ent. type series no. 394.

*Remarks.* In addition to the type series there is a male (Plate 1, Fig. 3, 6) from Efulen (Good) which differs in several respects from the types (and accordingly not made one of them). This specimen is smaller (length of fore wing, 17 mm.), the androconial patch of the hind wing above only about half the size, centered on the origin of Rs, does not reach either Sc or the base of  $M_3$ , and is very weakly colored; the apical black-brown patch of this wing is fully twice as thick as in the other specimens, more sharply defined inwardly. On the fore wing below, though the inner marginal area below  $Cu_2$  is all white (save for a small spot just below origin of  $Cu_2$ , absent in the type series males) it is only feebly tinged creamy in the center. Whether this is just an individual variant of *demeter*, or yet another species is not determinable.

The question of the relationship between *demeter* and *hymen* is still open. I have treated them as different species because of the distinct and sharp structural difference (scent patch locus) which is more likely to be a trait of specific distinctness than one of subspecies. Yet the mutual allopatry which the two forms show from the meager material at hand and the absence of difference in the male genitalia make the possibility of their being merely geographic races still one to be considered.

*Dapidodigma demeter nuptus* ssp. nov. (Plate 1, Fig. 9, 12).

*Male.* Differs from typical *demeter* in the slightly smaller hind wing androconial patch and much thicker apical black-brown patch (ca. 3 mm.) above; in the more extensive white of the inner marginal area below, blue-white invading well into  $Cu_1$ - $Cu_2$ ; in the much stronger white streak of the hind wing, not cut by the postmedian line of Sc-Rs; in the whiter terminal area between the black submarginal thread line and the termen; in the paler tornal area below  $M_3$  and distad of the diagonal segments of the postmedian band; in the thicker white central line of these segments, thicker than the black-brown which flanks the white.

*Female.* The blue of both wings above is more extensive, on the fore wing reaching well into the base of  $M_3$ - $Cu_1$ , which it barely touches in the typical subspecies, and on the hind wing fusing completely with the subterminal bluish lunules in  $Cu_1$ - $Cu_2$ -2A. Below, as in the male, the inner marginal white of the fore wing is more extensive, extending (between median and postmedian lines) well into  $Cu_1$ - $Cu_2$ ; on the hind wing the differences are as given for the male, save that the white streak is here even stronger, stout and continuous from inner margin to apex.

*Length of fore wing.* Male, ca. 18.5 mm. (single specimen, damaged); female, 19 mm. (2 specimens).

*Holotype*, male, Kabongo, Katanga, Nov. 18, 1952 (Ch. Seydel), C. M. Acc. 15717; *allotype*, female, same locality and collector, Oct. 27, 1953, C. M. Acc. 16038; one female *paratype*, same locality, collector and accession number, Nov. 16, 1953. C. M. Ent. type series no. 395.

*Remarks.* This subspecies marks a notable extension of the known range of the genus. M. Seydel writes that it was a recent discovery with him, the holotype being the first specimen he had ever taken in many years of collecting in the Katanga.

#### EXPLANATION OF PLATE I

- Fig. 1. *Dapidodigma hymen* F., ♂. Harbel, Liberia.  
Fig. 2. *Dapidodigma demeter* sp. nov., holotype ♂.  
Fig. 3. *Dapidodigma demeter* variety? Efulen, Cameroun.  
Fig. 4. Under side of specimen shown in Fig. 1.  
Fig. 5. Under side of specimen shown in Fig. 2.  
Fig. 6. Under side of specimen shown in Fig. 3.  
Fig. 7. *Dapidodigma hymen* F., ♀. Wanau Forest Reserve, near Ganta, Liberia.  
Fig. 8. *Dapidodigma demeter* sp. nov., allotype ♀.  
Fig. 9. *Dapidodigma demeter nuptus* ssp. nov., paratype ♀.  
Fig. 10. Under side of specimen shown in Fig. 7.  
Fig. 11. Under side of specimen shown in Fig. 8.  
Fig. 12. Under side of specimen shown in Fig. 9.